

Remarks / Arguments

Summary:

Applicants are presenting herein an amendment to the paragraph beginning at page 17, line 3 of the specification, as suggested by the examiner, to correct erroneous reference numerals.

Applicants are also presenting amendments to claims 15-16, 21, 23, 32-35 and 61-62 along with cancellation of claims 22, 24, 26, 36, 74-75, 77-79, 83-86 and 89 without prejudice to presentation of the subject matter thereof in a continuing application. New claims 95-111 are also presented. After entry of the amendments, claims 15-16, 21, 23, 32-35, 61-62, 67 and 95-111 will be pending in the application.

Support for the amended claims and for new claims 95-103 and 109-111 is found at page 11 line 29 through page 14 line 32 and at page 19 line 30 through page 20 line 21. Further support for new claims 104-108 is found at page 17 lines 3-29 and at page 19 lines 22-29.

Power of Attorney and 3.73(b) Statement

A power of attorney signed by the Assignee and a statement under 37 CFR 3.73(b) accompany this response.

Information Disclosure Statement

A Supplemental Information Disclosure Statement also accompanies this response.

Claim Objections

The claim objections enumerated in paragraph 3 of the Examiner's detailed action have been addressed by amendment or have been rendered moot by cancellation of the affected claims.

Claim Rejections

The pending claims under consideration stand rejected as anticipated by US 6,208,250 to Dixon et al., or as unpatentable over Dixon et al. in view of one or more secondary references (US 5,758,371 to Van Dyke et al.; US 3,970,846 to Schofield, Jr. et al.).

Applicants respectfully traverse the rejections in view of the claim amendments beginning on page 3.

The amendment to independent apparatus claim 15 includes a recitation of a detection unit comprising a single emitter and a plurality of detectors. The amendment to independent method claim 61 includes a recitation of providing a detection unit comprising a single emitter and a plurality of detectors. The cited art neither discloses nor renders obvious such an arrangement.

Dixon et al. describe the use of two different sensor technologies, load cells mounted on a base frame and pressure sensitive sensors mounted on a support deck or within a mattress. Not surprisingly, these different types of sensors carry out two distinct functions. Specifically, the load cells respond to changes in weight applied to support surface, and therefore detect the presence or absence of a bed occupant. The pressure sensors, on the other hand, detect the specific position of the occupant on the support surface. The Examiner's attention is directed to col. 1 lines 36-65, col. 2 lines 43-64, col. 9 lines 1-2 and 16-21; and col. 9 line 36 - col. 10 line 15. Despite the disclosed use of the load cells 70 to sense a collision with an obstruction (col. 16 lines 11-23), neither sensor is disclosed as being a detection unit comprising an emitter mounted on one bed component and a plurality of detectors mounted on another bed component. Nor do the two different types of sensors interact with each other in any way that would suggest that the two sensors are components of an emitter/detector unit.

Regarding Van Dyke et al., the Examiner is correct in observing that the reference teaches the use of infrared sensors to determine when the reference "handling device" is too near a wall or other object. However there is no disclosure of a single emitter and a plurality of detectors for sensing the presence of an obstacle within a path of travel between the emitter and any one of a plurality of detectors. If one takes the view that the reference infrared sensor is analogous to Applicants' emitter and that the wall or other object is analogous to a Applicants' detector, then the reference device does not operate to

provide a control signal in response to an obstacle within the path of travel between the emitter and the detector(s) because the "detector" is the obstruction itself and therefore cannot be between the emitter and itself. If, on the other hand, one takes the view that the VanDyke et al. infrared device includes both an emitter and a detector (a view not supported by the Van Dyke et al. specification), then clearly the obstruction being detected is not within an intercomponent path of travel between the emitter and the detector. Thus, it is seen that the VanDyke et al. reference, despite teaching the use of infrared sensors, does not teach or render obvious the invention recited in Applicants' amended independent claims 15 and 61.

US 3,742,222 to Endl is disclosed in a supplemental IDS that accompanies this response. Note that the reference teaches multiple sources and multiple detectors, not a single source and a plurality of detectors. Significantly, although the reference acknowledges the disadvantages of a multiplicity of components (see for example column 2 lines 45-53.) it nevertheless teaches a system with multiple light sources, not a single light source. Also note that the reference teaches the desirability of reducing the intensity of all the light beams when any one light beam is broken in order to prevent system instability and discloses circuitry to accomplish this objective (see column 3 lines 40-51). Thus, although the reference seems to recognize certain disadvantages of multiple light sources, it nevertheless continues to teach the use of multiple light sources and even provides a teaching of circuitry to accommodate certain disadvantages, rather than teaching the reader to dispense with multiple light sources in favor of a single light source.

US 3,704,396 to Macdonald is also disclosed in the supplemental IDS that accompanies this response. Once again, note that the reference teaches multiple sources and multiple detectors (FIG. 1) not a single source and multiple detectors. Applicants acknowledge the statement beginning at column 2 line 63 that any desired number of light sources may be utilized. However, a fair reading of the reference makes it clear that the contemplated safety device always involves a one-to-one correspondence between the quantity of sources and the quantity of receivers and never suggests the possibility of a single source and multiple receivers.

Macdonald, like Endl, also acknowledges the existence of certain problems suffered by systems that employ a one-to-one correspondence between sources and receivers, specifically the problem of source/receiver alignment (see the paragraph beginning at column 1 line 58). But, as with Endl, acknowledgment of and recognition of this disadvantage does not provoke a recognition of using something other than a one-to-one correspondence, such as Applicants' single emitter and multiple detectors.

Thus, it is seen that neither Endl nor Macdonald teach or render obvious the invention recited in applicants' claims 15 and 61.

In view of the foregoing, Applicants' maintain that independent claims 15 and 61 are allowable and that dependent claims 16, 21, 23, 32-35, 95-103, 62, 67 and 109-111 are allowable by virtue of their dependency and the additional limitations that they recite.

Request for Reconsideration:

In view of the foregoing, Applicants respectfully request withdrawal of the various objections and rejections and allowance of the pending claims still under consideration including new claims 104-108. The Examiner is invited to telephone Applicants' undersigned representative if it appears that a telephone discussion would help resolve any outstanding matters.

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